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EFFECTS OF RECENT DUST STORMS

A Radio talk by C. E. Kellogg, Bureau of Chemistry and Soils, delivered in Department of Agriculture period, National Farm and Home Hour Monday, May 21, 1934.

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Ladies and Gentlemen:

It chanced that I happened to experience at first hand, some of the dust storms at their point of origin, which even came as far east as Washington, a few days ago. Coming into Fargo, North Dakota, the early afternoon of April 21, for about an hour of run, one could scarcely glimpse the fence post on the railway right-o-way from the coach windows. All the way west after leaving St. Paul, the general dust cloud became thicker and thicker until at noon lights were necessary in the train. And then in Fargo and vicinity there was a shower of rain for about ten minutes. This was not enough to lay the dust or even to slacken the storm, but quite sufficient to plaster the cars and houses with a goodly coat of mud.

Although this particular day was perhaps among the worst, the northern Great Plains has been having this dust for more than a month. The eastern Dakotas have more general storms of fine dust. The one which was just mentioned extended south beyond Omaha and far north into Canada. But the western Great Plains have storms of more local nature and with somewhat coarser material. This fine sand or coarse silt under a strong wind does severe damage to growing plants. I have seen the outer gray layer of wooden telephone poles and fence posts completely cut away, leaving the sides toward the window a bright yellow of freshly cut lumber.

Clearly, this year has been the worst in the history of the country. Ordinarily a few mild storms may be expected, but as soon as the wheat has grown enough to cover the fields they usually cease. In general, the severity of these dust storms has been increasing during the past few years. Naturally, as more of the land throughout the Great Plains was plowed, the more loose soil was exposed to the wind. It is well known of course, that the fine sandy soils are easily moved by the wind, but during dry conditions, heavy soils where the texture is uniform, are subject to about as severe blowing. For several years, and especially during the last five, the amount of rain falling in the northern Great Plains has been declining. This deficiency of moisture makes the soil especially loose and subject to blowing when cultivated, and at the same time prevents the growth of the small grains which normally protect the cultivated fields. So despite the fact that farmers have been taking important measures to control the blowing of the soil during the past few years, the deficiency of rainfall has more than counteracted their efforts.

From Lake Michigan to central Montana, over the route which I travelled, there is a lack of moisture, but the north country is in an especially serious condition. There are miles and miles of country with scarcely a green spear of grass or grain, and plowed fields lying unprotected from the action of hot dry winds. Miles of road ditch are filled with fine blown earth, fences are often completely covered with these drifts, and even roads blocked with them as from snow.

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When the new land is first plowed the old roots of the grasses hold the soil together and prevent much movement by the wind. But as these old roots rot out, and especially if organic matter from other sources is not added, this surface soil becomes more and more subject to movement by the wind. Especially in positions exposed to the wind and in places where the texture of the soil is uniform the mellow surface soil is removed, exposing the less fertile lower layers. Such areas are of much less value for crop production or grazing. Only after years and years under the grassland cover can a new surface soil be developed.

Just what becomes of all the fine dust is not clear. A great deal of it can be accounted for in drifts along the fences and in ditches but much of it must simply settle on the land to form a new, almost imperceptible surface films. A great portion of the soils of the middle west have apparently been formed from just such material, known as loess, and deposited by westerly winds during an old period of aridity when little vegetative growth occupied the surface.

Of course the severe drought is the fundamental calamity and is responsible for these unprecedented dust storms. But to the house wife the dust is a nightmare. In this country people leave the storm windows on until after the likelihood of dust passes by. But even so, it shifts around the sashes and under the doors to pile in little ripples and drifts. It goes absolutely everywhere. Animals seem to be badly affected by breathing the dust-laden air. Last week a post-mortem showed the lungs of two dead horses to be filled with it. Its effects upon humans are not well known but there is considerable evidence that the lungs are injured by it.

According to normal years the heavy rainfall for the north country comes in May and June - but it has not come this year. Every day the land stays dry, there is just that much less chance for rain - a sort of vicious spiral. Without rain there is no water, no pasture, no wheat; and there are continued dust storms.

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